

Fig. 1

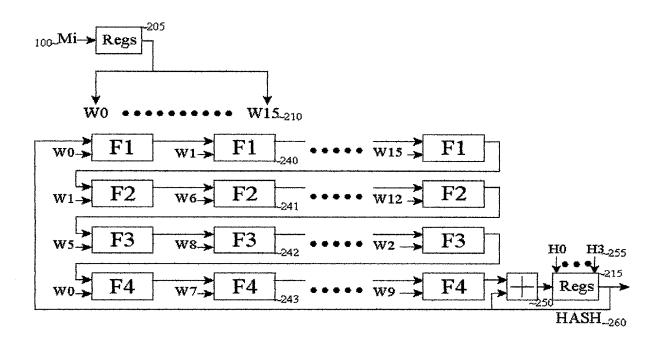


Fig. 2

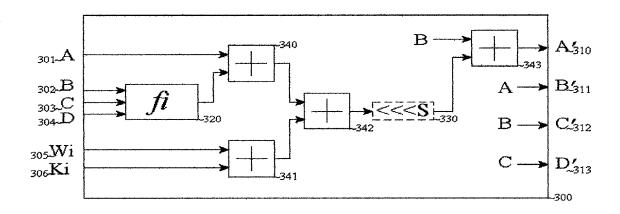


Fig. 3

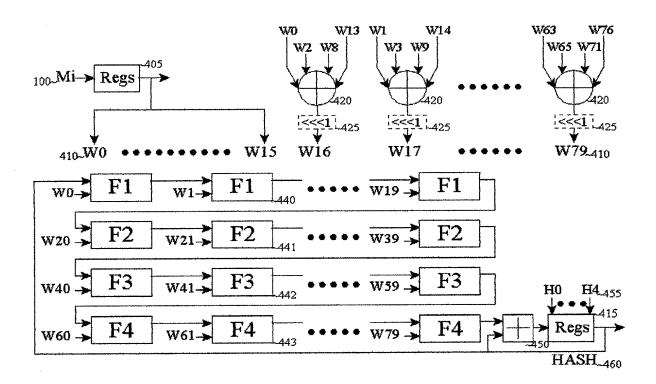


Fig. 4

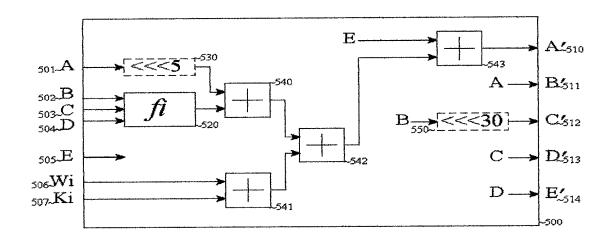


Fig. 5

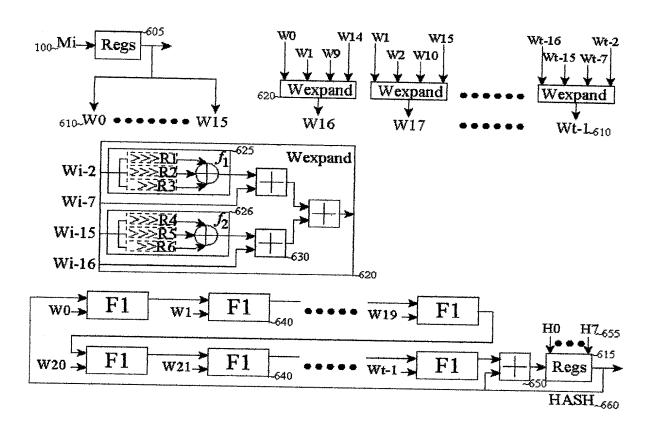


Fig. 6

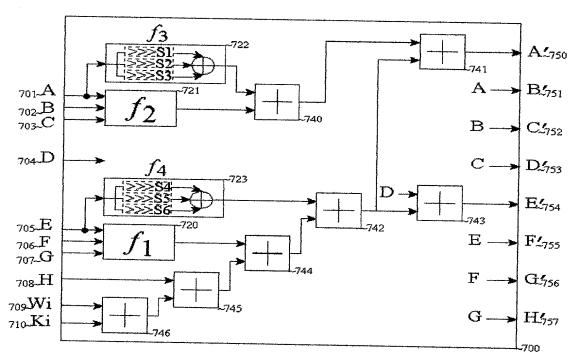


Fig. 7

$$\begin{split} &\text{hl}\left(X,\,Y,\,Z\right) = \left(X\,\,\text{AND}\,\,Y\right)\,\text{OR}\,\left(\sim\!\!X\,\,\text{AND}\,\,Z\right)\\ &\text{h2}(X,\,Y,\,Z) = X\,\,\,\text{XOR}\,\,\,Y\,\,\,\text{XOR}\,\,\,Z\\ &\text{h3}(X,\,Y,\,Z) = \left(X\,\,\text{AND}\,\,Y\right)\,\text{OR}\,\left(X\,\,\text{AND}\,\,Z\right)\,\text{OR}\,\left(Y\,\,\text{AND}\,\,Z\right)\\ &\text{h4}(X,\,Y,\,Z) = Y\,\,\text{XOR}\,\left(\sim\!\!Z\,\,\text{AND}\,\,X\right) \end{split}$$

(a) 1 2 3 4 5 Group 6 7 8 Rounds 1-16 17-20 21-32 33-40 41-48 49-60 61-64 65-80 MD5 h1 h1' h1' h2 h2 h4 h4 SHA-1 h1 h1 h2 h2 h3 h3 h2 h2 (b)

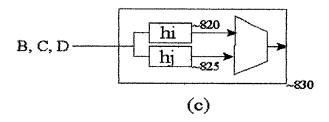


Fig. 8

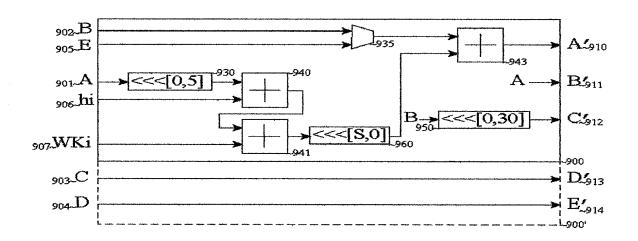


Fig. 9

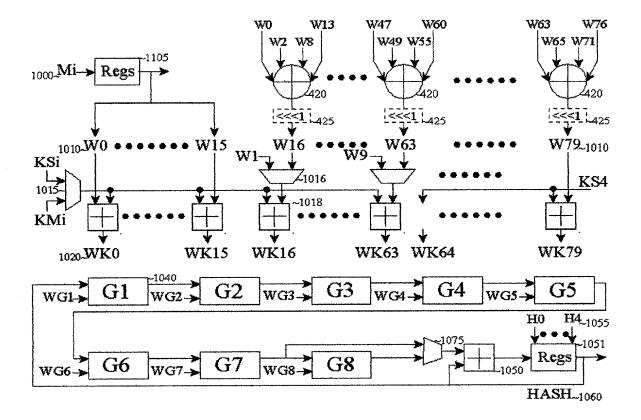


Fig. 10